What is Claimed Is:

- 1. A thermostable mutant B-type DNA polymerase comprising a Y-GG/A amino acid motif between the N-terminal 3'-5'-exonuclease domain and the C-terminal polymerase domain wherein the tyrosine of the motif is substituted with another amino acid.
- 2. The mutant B-type DNA polymerase according to claim 1 wherein the tyrosine of the motif is substituted with an amino acid with an aromatic side chain.
- 3. The mutant thermostable B-type DNA polymerase according to claim 1 having a Y→F,Y→W or Y→H mutation.
- 4. The mutant B-type DNA polymerase according to claim 1 wherein the tyrosine of the motif is substituted with an amino acid with an hydrophilic side chain.
- 5. The mutant thermostable B-type DNA/polymerase according to claim 1 having a Y \rightarrow N or Y \rightarrow S mutation.
- 6. The mutant thermostable B-type DNA polymerase according to claim 1 wherein its wild type form is obtainable from Euryarchaea.
- 7. The mutant thermostable B-type DNA polymerase according to claim 1 wherein its wild type form is obtainable from *Thermococcus aggregans*.
- 8. The mutant of a thermostable B-type DNA polymerase according to claim 1 wherein the amino acid sequence of its wild type form is ≥80% homologous to the amino acid sequence of wild type Tag DNA polymerase.
- 9. A DNA encoding a thermostable mutant DNA polymerase of claim 1.
- 10. A vector containing the DNA according to claim 9.
- 11. A transformed host cell comprising the vector according to claim 10.

- 12. A process for obtaining a polymerase according to claim 1 comprising the steps of cloning and mutagenesis of the gene, followed by the expression and purification of the protein.
- 13. A method of using the polymerase according to claim 1 for synthesizing nucleic acids.
- 14. A method of using the polymerase according to claim 1 for polymerase chain reactions.